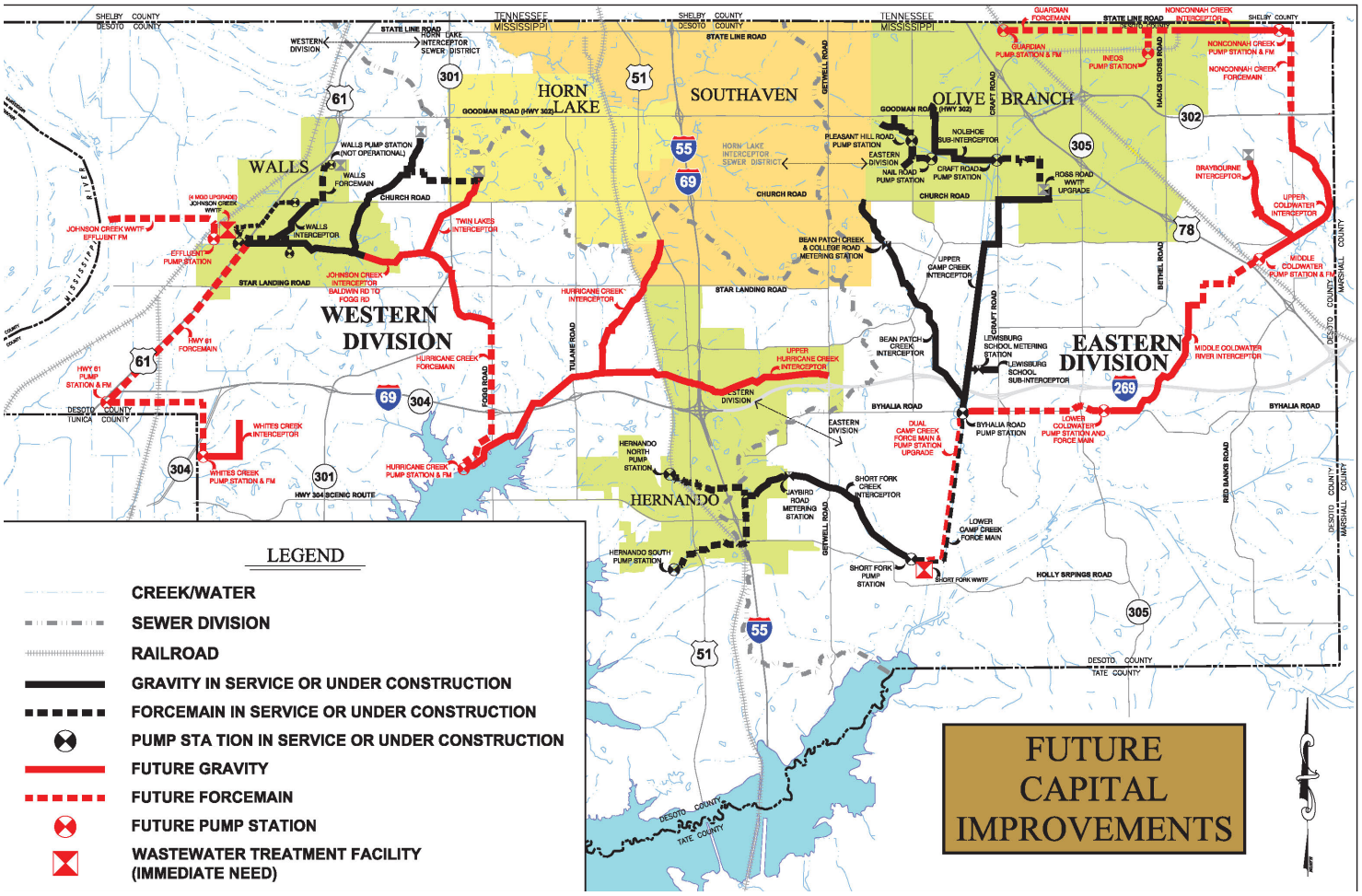
Water and Sewer

DeSoto County is not a water service provider and does not operate any water delivery systems. There are 14 certificated, non-municipal water associations operating in the county that are owned by private companies or water authorities. Each provider has a specific service area, accessing the Sparta Sand, Upper Wilcox and Lower Wilcox aquifers through wells. Residents in areas located within water service areas where water lines do not exist or in areas located outside of service areas rely on wells to provide water supply.

Sewer service within the study corridor is provided by DeSoto County Regional Utility Authority (DCRUA). DCRUA was formed to provide countywide sewer service in response to the possibility that future growth might be constrained by lack of adequate sewer treatment facilities. DCRUA functions as a wholesaler, meaning that all water, wastewater and sewage is disposed of through the Authority's treatment system. The 10 private and multiple municipal wastewater treatment companies and departments will continue to operate as local retail wastewater and sewerage services, providing the service to individual users.

The map on the following page shows DCRUA's future plans for capital improvements (as of 2011). The Johnson Creek Wastewater Treatment Facility is being updated to a four million gallon per day (MGD) facility in the western portion of the county. The Short Fork Wastewater Treatment Facility in the eastern portion of the county is operating at close to capacity at 4 MGD. DCRUA plans to expand capacity at this facility to 12 MGD. The treatment facility upgrades are expected to provide DeSoto County with adequate treatment capacity to at least the target year of 2030.

FUTURE CAPITAL IMPROVEMENTS
DCRUA SYSTEM



Recommendations

The county should consider the following recommendations to guide water and wastewater improvements:

Develop a 10-Year Water Supply Work Plan for the county. The county should develop a 10-Year Water Supply Facilities Work Plan to make certain that the public and private sector water service utilities provide, repair and/or replace potable water supply, treatment and distribution facilities. This plan would be used to correct existing deficiencies in their respective service areas as may be required to meet or exceed the level-of-service standards established in the plan.

The document should be designed to: assess current and projected potable water demands; evaluate the sources and capacities of available water supplies; and identify those water supply projects, using all available technologies, necessary to meet the county's water demands for a 20-year period.

The development and utilization of new potable water supply sources and the acquisition of land necessary for such development shall be based upon the information, guidelines and procedures identified within the plan. The work plan should be updated, at a minimum, every five years.

Continue the implementation and improvement programs in the DCRUA Master Plan and continue the construction of water and sewer lines to serve growing areas of the county. Use the provision of sanitary sewer service as a land planning tool to guide the location and timing of new development and prioritize major new investments to those areas targeted for new growth by the **Stewardship Plan**. Design sewer main extensions, major pump stations and minor lift stations so as to provide the maximum service area coverage for the least amount of cost.

Establish a service expansion policy to determine when, how, where, and who pays for expansion of water and sewer services. The county should work with the water associations/companies and DCRUA to establish a service expansion policy to determine which areas of the county should be targeted as priorities in being provided potable water supply and sanitary sewage disposal. The identified target service areas should be considered priority funding areas for committing financial resources to those services.

Developers should be responsible for funding the expansion of sewer and water lines to serve new development. Developers should be responsible for funding the expansion of sewer and water lines to serve new development, and should be responsible for analyzing the capacity of the system to meet peak demand flows and fire flows, so as to determine if adequate capacity exists to meet the increased demand on the distribution systems. Provide for a prorated cost sharing program with developers to fund water and sewer improvements.

The county should consider adoption of an ordinance allowing reimbursements to developers where their development provides substantial excess capacity in the water distribution system or wastewater collection system. In order to further assure high water and sewer service standards, the county should develop and maintain countywide design standards for all improvements and extensions of water distribution and sewer collection systems.

Set targeted level-of-service standards for water and sewer. LOS standards should be adopted and used as the basis for determining the availability of facility capacity and for determining the demand generated by new development.

LOS standards should be agreed upon between the county and the water service providers for the use in treating, transmitting and distributing a safe and adequate potable water supply. Both average daily water use and peak rate of demand are important in designing a system that can deliver adequate water supply. To analyze demand, the total water sales for commercial, industrial and institutional uses is equated or translated to equivalent residential uses (ERUs). An ERU is generally the equivalent of a single family unit.

- For example, standards may include maintaining an average daily flow of 210 gallons per ERU and a maximum daily flow of 575 gallons per ERU.

LOS standards should be agreed upon between the county and DCRUA for the use in planning and designing the sanitary sewer system. The design flow standards for sanitary sewer should be based on a combination of population and land uses.

- For example, a figure of 300 gallons per day per connection for residential demand could be used, and a figure of 2,000 gallons per acre for general commercial demand could be used.

Another example of a LOS standard is:

- Meet or exceed on a yearly basis 90% of the days that the DCRUA wastewater treatment facilities are in full compliance with the effluent quality standards contained in the Mississippi Pollution Discharge Elimination System (MPDES) permitted for each individual facility discharge.

DeSoto County should develop procedures and programs to monitor levels-of-service of each water supply, water treatment and wastewater treatment facility for use by County agencies that issue development permits. Such procedures may include the establishment of water and wastewater allocation processes to assure that adequate water supply, and water and wastewater transmission and treatment capacity is available prior to issuance of development permits.

Consider adopting a fire flow ordinance and maintain the standards established for fire protection flows. The ordinance would determine minimum fire flow requirements for new developments. Residential fire flow requirements are based upon distance between buildings and non-residential fire flow requirements are based upon land uses or zoning districts. Examples are shown below:

Nonresidential Fire Flow Requirements

Zoning type	Fire Flow gallons per minute (gpm)	Duration (hours)
Neighborhood Commercial	1,750	2
Highway Commercial and Office	2,500	2
General Commercial and Industrial	3,000	3

Residential Fire Flow Requirements

Distance between Buildings	Fire Flow gallons per minute (gpm)	Duration (hours)
Greater than 100	500	2
31-100	750	2
11-30	1,000	2
Less than 11	1,500	2

Site Selection Guidelines

Locational criteria for sewer and water facilities relate primarily to the acquisition of easements for the location and placement of sewer lines relative to land slope. The following criteria should apply to the location of new water and sewer facilities:

- Encourage new development adjacent to existing lines to tie into the sewer and water systems in the most efficient way possible. It may be necessary to loop water lines to provide redundancy within the system.
- Gravity sewer lines are preferable, but sewage pumping stations may be needed.
- Sewer lines should correspond to the natural and altered slope of the land.
- When possible, water and sewer lines should follow public rights-of-way.
- Specific engineering will be required for each system expansion.